DOCUMENT RESUME

ED 394 506 IR 017 807

AUTHOR Lane, Carla; Cassidy, Sheila
TITLE Star Schools Projects: Distance Learning Model Practices.
INSTITUTION WestEd, San Francisco, CA.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE Apr 96
NOTE 16p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Access to Education; *Distance Education; *Educational Development; Educational Technology; Instructional Innovation; Models; Nontraditional Education; Professional Development; Student Improvement; Teacher Education; *Teaching Methods
IDENTIFIERS *Star Schools

ABSTRACT

This document describes model practices of the Star Schools Program, whose purpose is to provide quality, cost-effective instruction and training through distance education technologies. Benefits which have resulted from the Star Schools Projects for local staff, teachers, and parents are identified. The TEAMS Project focuses on a Three-Tier Distance Learning Staff Development Model; it provides simultaneous teacher training and student instruction. Promising practices for first- through fourth-year teachers which have resulted from the TEAMS Project are described. A table shows a comparison of the existing professional development model and the new TEAMS distance learning professional development model. The TEAMS evaluation method for determining student improvement is also described. Model practices of the Star School Projects are then discussed. These include providing distance learning information and technical assistance; access through cable and public television agencies; access to otherwise unavailable courses and resources; access to programs by learners in geographically isolated areas; simultaneous student instruction and teacher training; education of leaders in non-traditional educational settings; meeting the needs of specific groups of learners; and improved preservice and inservice of teachers. A sample of courses offered through the Star Schools Projects in 1995-96 is provided for the following subjects: English language arts; health and life skills; languages; mathematics; science; and technology. (AEF)

Star Schools Projects
Distance Learning Model Practices

by
Carla Lane, Ed.D., Project Director
Sheila Cassidy, DLRN Consultant
Distance Learning Resource Network
A Star Schools Dissemination Project
Far West Laboratory
San Francisco, CA

Using satellite delivery of live, interactive television programs, on-line computer support, and other advanced technologies, over one million six hundred thousand students, teachers, administrators, parents and community members in rural, urban and suburban areas in the fifty states and U.S. territories are advancing educationally through the use of distance learning, because of model practices employed by the U.S. Department of Education Star Schools Projects. Local staff, students and parents select nationally-available programs which meet their local needs, with amazing results.

- Elementary students are beginning to love mathematics and science and are progressing far beyond traditional expectations
- Elementary and middle grade students enlarge their views of the world by talking with astronauts "visiting" their classrooms
- Migrant students continue a sequential learning program, even as they move to new work locations with their families
- Schools which cannot find or afford additional teachers for German, Japanese, Spanish, music, art, chemistry, physics and Calculus, add to their staff and courses through distance learning
- Learners of all ages in non-traditional educational settings in their communities participate in health and literacy education
- Early childhood educators have state of the art staff development designed just for them
- Elementary teachers who were once afraid to teach mathematics and science are now excited about doing so
- Teachers and administrators have a broad array of staff development choices and interaction with national and regional experts
- Parents have additional opportunities to learn how to be partners in their children's education

- Cable and public television agencies have become partners with educators to broadcast these programs

- Program choices are made at the local level using a variety of information and technical assistance from the Star Schools Dissemination Projects

- Three states with state-wide projects are developing networks to support distance learning.

The Star Schools Program

Star Schools legislation was enacted by Congress with bipartisan support in 1988. It is funded through the Office of Educational Research and Improvement at the U.S. Department of Education. Its purpose is to provide quality, cost-effective instruction and training, through distance education technologies. Every two years, through a competitive application process, Star Schools Projects have received grants to serve multi-state or single-state regions. The projects have proven effective for K-12 students, teachers, parents and communities in rural, urban, and suburban areas. Dissemination projects are currently funded to assist in program information dissemination and technical assistance to schools, districts and states in using distance learning technologies and gaining access to programming provided by Star Schools Projects.

Promising Practices

Many promising practices have been documented as a result of the evaluations of the Star Schools projects. For example, the TEAMS Project has documented promising new practices in simultaneous student instruction and teacher training, changes in teaching methods, and student improvement.

TEAMS focuses on a Three-Tier Distance Learning Staff Development Model which includes theoretical and implementation training. It provides simultaneous teacher training and student instruction. Teacher training is provided through in-class experience, practice, and support from the studio teacher through live, interactive student instructional programs. This approach has provided answers for many problems associated with traditional staff development design.

- It is long term, sequential training
- It fosters immediate transfer of learning, with new skills becoming a part of the teacher's repertoire of instructional methods
- It is primarily conducted in the teacher's classroom during the school day
- It creates immediate changes in the roles of the teacher and student
- It provides opportunities for teachers to see students being successful with a rich and challenging curriculum. This allows them to change their attitudes and behaviors related to instruction and expectations of their students.
- It provides motivation for teachers to participate in other staff development after the school day because it is directly related to their classroom program

The results that emerged during the evaluation created a new model for teacher pre-service and in-service. TEAMS teachers reported that they viewed the studio teacher as a role model. As a result, they were able to move easily through the seven levels of adoption and use observed in the Concerns Based Adoption Model.

First year TEAMS teachers reported that they felt that the programs required extensive study to learn the new instructional methods. They felt the time was profitable because students were learning much more and enjoyed the new methods. Teachers moved through the levels of use of orientation, preparation and mechanical use, the third use level in which the teacher focuses on day-to-day use with little time for reflection.

Second year teachers spent less time preparing. Their higher level of comfort gave them the confidence in their skills to use the methods in other math or science classes with their students. Methods included hands-on, discovery, and collaborative group learning. They gained confidence because the television teacher provided step by step guidance in presenting material. Teachers reported that they received more usable information on new instructional methods through TEAMS programming than through in-service seminars. They moved to a routine level of use (IV A).

Third year teachers reported that the instructional methods had become natural extensions of their teaching style. They fully adopted and used the methods across the curriculum. They moved to a level of use called refinement (IV B).

Fourth year teachers reported that they had fully adopted the instructional methods and used them across the curriculum. They continue to use the TEAMS programs because students enjoyed it and learn from it. They have become mentors to new TEAMS teachers. They are in the V and VI levels of use - integration and renewal.

Using TEAMS has effectively provided teachers with new methods which they use because they have watched the television teacher demonstrate the methods. Immediately after viewing the program, they apply the methods with their students. These results were reported across the United States.

The model that has evolved from TEAMS is many faceted. A comparison of the existing professional development model and the new TEAMS distance learning professional development model is shown in Table 1.

Table 1
Distance Learning Professional Development Model

Existing Professional Development Model	New Distance Learning Professional Development Model
Face -to-face	Distance learning delivered
Inservice day (2-4 per year): 8-24 per year	Weekly 1-1/2-2 hours per week: 64 hours per year
Travel to inservice site	Delivered to teacher's classroom/site

In-service instructor has a limited ability to develop as a role model for the teacher	Role model provided to teacher by distance learning instructor
Large inservice group	One-to-one
Short demonstration	Full step-by-step and frequent demonstration
Limited examples	Variety of examples
Very limited hands-on	Twice weekly hands-on
Support: Limited access to follow-up with inservice provider	Support: Direct and frequent access to distance learning instructor via television, telephone, fax, computer
Limited opportunity to process information and apply it	Provides opportunity to process information and apply it
Limited application of new information	Immediate application of new information
Students are seldom included in in-service	Provides opportunities for teachers to see students being successful; allows attitude and behavior changes related to instruction and expectations of their students.
Print materials limited to handouts	Full print materials which provide theory, information, methods, and implementation for student programs
Instructional materials are not provided	All instructional materials are provided
Use text as the primary instructional tool	Used the text only as a resource
General instructions	Content specific instructions
No opportunity to review	Tape review
Costs: non-teaching days or substitute	Costs: nothing additional Two for one - students and teachers
Instruction only for the teacher	Simultaneous teacher training and student instruction:
Results: Limited	Results: Significant change
Little change in teaching methods	Significant change in teaching methods
Limited increase in content teaching time	Increase in content teaching time
Limited gain in non-specialty content area	Significant gain in non-specialty content area knowledge and comfort level
Limited gain in confidence to teach in non-specialty areas	Significant gain in confidence to teach in non-specialty areas
Limited increase in use of instructional methods across the curriculum	Uses new instructional methods across the curriculum
Limited increase in mentoring	Become mentors to new instructors
Limited movement to higher levels of use	Moves teachers to higher levels of use

Student Improvement

5

The TEAMS evaluation developed a new method to determine the impact that the distance learning program had on students and collected basic information on gender and participation in Chapter 1, LEP, Gifted, and Special Education programs. TEAMS teachers were asked to describe the degree of the outcome for each student that could be attributed solely to using TEAMS. Teachers ranked students on their improvement in content knowledge and skills, critical thinking and problem solving, language skills, interest in the subject area, quality of work, interest in school, attendance, behavior, taking responsibility for learning, greater confidence as a learner, and higher self-regard. Usable data was returned for 7,299 students, making this the largest study conducted with students in a distance learning program. All independent variables were significant at the level of P=.0001.

The evaluation focused on new ways to gather information about student learning outcomes. While it has become apparent that students learn as well from educational uses of technology, the use of standardized test scores does not report all of the learning that is taking place. The TEAMS student progress form represents a significant new method to collect and assess student learning and improvement in distance learning programs.

Model Practices

Providing Distance Learning Information and Technical Assistance

In addition to group presentations, each of the Star Schools Dissemination Projects has developed unique strategies to provide distance learning information and technical assistance to local agencies. The Distance Learning Resource Network at Far West Laboratory, The Far View Project at the Pacific Mountain Network in Denver, Colorado, provides national teleconferences and video resources. SatLink at the Missouri School Boards Association in Missouri, publishes the "TV Guide" for instructional and training programs delivered via satellite.

Access through Cable and Public Television Agencies

Besides providing satellite receive dishes to participating schools, Star Schools Projects have collaborated with local cable and public television agencies to assist them in broadcasting Star Schools programs throughout their areas.

Access to Otherwise Unavailable Courses and Resources

OSU-NAU and STEP/Star provide full language, mathematics, science and social studies courses to students in schools without qualified teachers to teach those courses. MCET, STEP/Star, and TEAMS provide program resources otherwise unavailable to students, enriching the local curriculum with electronic field trip, studio teacher expertise, and educational experiences not possible in the typical classroom.

Access to Programs by Learners in Geographically Isolated Areas

OSU-NAU, STEP/Star, TEAMS, and United Star provide programs which reach students in geographically isolated areas. However, the Utah and Puerto Rico programs were designed specifically for that purpose.

Simultaneous Student Instruction and Teacher Training

TEAMS Distance Learning developed a program model to simultaneously train teachers while providing instruction for students. It is a highly cost-effective model, as well as one which has documented results for teachers and students. OSU-NAU and other projects incorporate this model.

Education of Learners in Non-Traditional Educational Settings

A number of the projects have participants who are in alternative or juvenile justice settings. However, the MCET project is specifically targeted to attract learners of all age to participate in health and literacy training at community-based agencies through the use of multiple technologies.

Meeting Needs of Specific Groups of Learners

Projects such as TEAMS and United Star meet the needs of specific populations such as migrant, Chapter I, limited English proficient, gifted, and advanced placement students.

Improved Preservice and Inservice of Teachers

TEAMS has developed a collaboration with local universities to include the use of technologies with preservice teachers. All of the multi-state projects have inservice components, which are delivered in more effective, cost-effective, and time-efficient ways through the use of technologies.

A Star Schools Course Sampler

The following courses provide a sample of the major courses offered through the Star Schools Projects in 1995-96.

English Language Arts

Title:	Windows on My World
Grade Level:	4-7
Audience:	Students and Teachers
Project:	Connections 2000
Provider:	TEAMS Distance Learning

Description: This series of literature-based language arts programs focuses on a major fictional book. Students experience sense-seeking and meaning-making strategies tied to literature exploration. They access the major ideas in the selection of literature drawing on their cultural, ethnic, and community backgrounds.

Title: Making it in America: ESL I
Grade Level: High School
Audience: Students
Project: Pacific Star Schools Partnership
Provider: STEP/Star

Description: Students receive practical and intensive instruction about American language and culture. Students learn survival skills they can apply in their personal lives, school lives, and community.

Title: Families Learning Together
Grade Level: Elementary
Audience: Parents
Project: HealthLinks
Provider: MCET

Description: This series empowers parents to teach their children reading, math and science skills through simple activities and games.

Title: Training for Early Childhood Educators
Grade Level: Pre-school through Grade 3
Audience: Teachers
Project: Star Schools: The Next Generation
Provider: OSU-NAU

Description: This series offers specialized training to educators on how to provide appropriate instruction in literacy, science and mathematics for at-risk children, ages four to eight years.

Health and Life Skills

Title: YouthLinks
Grade Level: High School
Audience: Students
Project: HealthLinks
Provider: MCET

Description: This series allows teens to have a voice about the many health issues that affect them, including: nutrition, violence, drugs, sexuality, stress and depression.

Title: Workplace Basics
Grade Level: High School, and Adults
Audience: Students
Project: Pacific Star Schools Partnership
Provider: STEP/Star

Description: This course emphasizes skills identified by the U.S. Department of Labor as being important in the modern workplace. Students identify their strengths and where they might best be applied, learn about employers' expectations of entry level to upper management positions, and develop a portfolio or resume for job interviews.

Title: Communicating with Caring
Grade Level: Middle School and High School
Audience: Teachers, Health Educators and Counselors
Project: HealthLinks
Provider: MCET

Description: This series instructs facilitators to present workshops for young teens and their caregivers.

Title: Getting a Grip on Violence
Grade Level: K-12
Audience: Staff, Parents, Community
Project: United Star Distance Learning Consortium
Provider: Educational Service Region 20, San Antonio, Texas

Description: This series explores the issue of violence and how it is affecting the nation's schools. It will examine current anti-violence models and how they are being used with students.

Title: Occupation Identification Planning
Grade Level: 8-12
Audience: Students, Staff
Project: United Star Distance Learning Consortium
Provider: Educational Service Region 20, San Antonio, Texas

Description: This series assists students in increasing their awareness of career possibilities and opportunities. They explore their talents and become empowered to pursue their future with foresight, knowledge and confidence.

Title: Project Estrella
Grade Level: Pre-School - 12
Audience: Migrant Families
Project: United Star Distance Learning Consortium
Provider: Educational Service Region 20, San Antonio, Texas

Description: This series builds capacity within the family unit for managing education for the migrant student. Topics include: managing moves from school to school; validating parenting skills; technology for special needs; building early childhood education; and promoting graduation and post-secondary opportunities.

Languages

Title: German by Satellite
Grade Level: Grades 3-4 and 5-6; High School
Audience: Students
Project: Star Schools: The Next Generation
Provider: OSU-NAU

Description: These series offer German language instruction to elementary and high school students, using satellite and other technologies.

Title: Foreign Language Initiative: Spanish for Gr. 7-8
Grade Level: 7-8
Audience: Students
Project: Star Schools: The Next Generation
Provider: OSU-NAU

Description: This series is an articulated, content-based second-language acquisition program. It is based on goals of selected essential skills language documents from many states within the context of content-based thematic units.

Mathematics

Title: Mathematics in My World
Grade Level: 4-6
Audience: Students and Teachers
Project: Connections 2000
Provider: TEAMS Distance Learning

Description: Using hands-on lessons and examples from the real world, this series explores and develops concepts related to statistics, probability, number, patterns, geometry, and measurement through scale drawing. Career awareness is an on-going and essential part of the programs.

Title: Let's Investigate!
Grade Level: 4-7
Audience: Students and Teachers
Project: Connections 2000
Provider: TEAMS Distance Learning

Description: This series encourages students to expand on mathematics topics over a period of time. Students work cooperatively on two investigations. The first expands the concept of fairness by exploring strategies, logic, number patterns, and probability to determine if a game is fair and to create their own fair game. In the second investigation, students explore linear measurement, square measurement, space figures, number concepts, and properties of geometric shapes as they plan and design a park.

Title: Turn on to Mathematics
Grade Level: 5-7
Audience: Students and Teachers
Project: Connections 2000
Provider: TEAMS Distance Learning

Description: Continuation of Mathematics in My World

Title: Getting Ready for Algebra
Grade Level: 5-8
Audience: Students and Teachers
Project: Star Schools: The Next Generation
Provider: OSU-NAU

Description: This series provides simultaneous student instruction and teacher training. It uses student-centered, learning by discovery and activity -oriented units to focus on the bid ideas common to arithmetic and Algebra to prepare students for Algebra.

Title: The Graphing Calculator: Teachers and Students Learning Together
Grade Level: 9-12
Audience: Students and Teachers
Project: Star Schools: The Next Generation
Provider: OSU-NAU

Description: This series provides simultaneous student instruction and teacher training. It supports the integration of the TI-85 graphing calculator into the mathematics curriculum.

Title: Algebra and Geometry Applications for Teachers
Grade Level: 7-12
Audience: Mathematics Teachers
Project: United Star Distance Learning Consortium
Provider: Educational Service Region 20, San Antonio, Texas

Description: This series models worthwhile mathematical tasks and helps teachers improve their ability to develop these tasks. Focus is on mathematical topics which illustrate connections to real-life problems and exciting mathematics.

Title: Mathematical Connections for Teachers
Grade Level: 5-12
Audience: Mathematics Teachers
Project: United Star Distance Learning Consortium
Provider: Educational Service Region 20, San Antonio, Texas

Description: This series assists teachers to help students build mathematical power. Topics provide motivation for learning traditional skills and are especially appropriate for those teaching beginning and intermediate algebra and geometry to high school students.

Science

Title: Energy
Grade Level: 4-6
Audience: Students and Teachers
Project: Connections 2000
Provider: TEAMS Distance Learning

Description: This series uses active learning and problem solving to develop the theme of energy through the exploration of electricity, weather, heat and plants. The programs emphasize hands-on investigations.

Title: Systems and Interactions
Grade Level: 4-6
Audience: Students and Teachers
Project: Connections 2000
Provider: TEAMS Distance Learning

Description: Students explore the properties and interactions of matter, and mechanics with the fundamental properties of forces and motion, emphasizing cycles and interactions.

Title: Geonauts
Grade Level: 4-6
Audience: Students and Teachers
Project: Star Schools: The Next Generation
Provider: OSU-NAU

Description: This earth and environmental science series is provided through a collaboration with the Grand Canyon National Park Service and the Grand Canyon Natural History Association. It utilizes satellite delivery, video, telephone and interactive multi-media.

Title: Young Astronauts
Grade Level: 4-6
Audience: Students
Project: Pacific Star Schools Partnership
Provider: STEP/Star

Description: The life span of stars and other galactic wonders, principles of flight, living in space, deploying current missions, voyage to outer planets, and careers in space are among topics explored in this series. The course uses aerospace themes to develop student interest and proficiency in science, math and technology.

Title: Integrated Ecology
Grade Level: 5-7
Audience: Students and Teachers
Project: Connections 2000
Provider: TEAMS Distance Learning

Description: Students connect earth, life, and physical science as they explore ecosystems through programs, including: ecological mapping; habitats-biomes; adaptation; humans in the ecosystem; interdependence; food webs; populations; connections.

Title: Project Earth
Grade Level: High School
Audience: Students
Project: Pacific Star Schools Partnership
Provider: STEP/Star

Description: This multi-disciplinary course focuses on the impacts of technology on the environment. It addresses topics including energy production, air and water pollution, forestry practices, oil spill cleanup, and the relationship between genetics and modern agriculture.

Title: Exploring Our Oceans
Grade Level: High Schools
Audience: Students
Project: Pacific Star Schools Partnership
Provider: STEP/Star

Description: Students learn about marine biology and oceanography as they explore kelp forests, tide pools, estuaries, and the deep sea. They will dive into the world of waves, whales, tsunamis and sharks, and investigate current coastal issues such as fisheries management, endangered species, oil and mineral exploration and pollution.

Title: Hand-in-Hand: Parents - Students - Teachers
Grade Level: Elementary and Middle School
Audience: Parents, Students and Teachers
Project: Connections 2000
Provider: TEAMS Distance Learning

Description: Programs assist parents, students and teachers in working together on science concepts they are learning at school.

Title: Science Alive for Teachers
Grade Level: 6-9
Audience: Science Teachers
Project: United Star Distance Learning Consortium
Provider: Educational Service Region 20, San Antonio, Texas

Description: This series uses hands-on science to focus on the principles of Scientific Literacy. Topics include: slime molds; FAST transformations; animal adaptations; natural communities; seasonal cycles; measurement in space; electricity; and matter.

Title: Physics for Teachers
Grade Level: 9-12
Audience: Physics Teachers
Project: United Star Distance Learning Consortium
Provider: Educational Service Region 20, San Antonio, Texas

Description: This series is designed to strengthen teachers' understanding of the concepts that are taught in physics and provide class-tested strategies for teaching these concepts to first-year physics students.

English Language Arts

Title: Rights and Responsibilities - Power to Make a Difference
Grade Level: 4-6
Audience: Students and Teachers
Project: Connections 2000
Provider: TEAMS Distance Learning

Description: This series focuses on civic values and democratic principles through historic, geographic, and biographical sketches/stories about ordinary and extraordinary people who have made a positive difference. Through interpreting primary sources and linking the past to the present, students learn to appreciated the debt owed to those with visions and dreams who took the risk of new and controversial ideas and opened up new opportunities for many.

Title: TEAMS World 2000
Grade Level: 4-7
Audience: Students and Teachers
Project: Connections 2000
Provider: TEAMS Distance Learning

Description: Students are challenged to look critically at one of the favorite pastimes, TV. They are involved in hands-on learning experiences, discussions, information gathering, and surveys. They learn how to analyze and question what they see and hear on TV.

Title: Pacific Northwest History
Grade Level: College
Audience: Students
Project: Pacific Star Schools Partnership
Provider: STEP/Star

Description: The course traces the cultures, peoples and events that have shaped Washington, Oregon, Idaho, Montana and Alaska.

Technology

Title: Technology for the Classroom
Grade Level: Elementary and Middle School
Audience: Teachers
Project: Connections 2000
Provider: TEAMS Distance Learning

Description: This series provides teachers with hands-on investigations of how technology is utilized to support curriculum and instruction in mathematics, science and social studies.

Title: Educational Video in the Classroom
Grade Level: Middle School and High School
Audience: Teachers
Project: HealthLinks
Provider: MCET

Description: This series examines how to integrate social-issues videos produced by teens for teens into the classroom.

Title: Basic Technological Literacy, Part A
Grade Level: Unspecified
Audience: Students and Teachers
Project: Star Links
Provider: Ana G. Mendez University System

Description: Series provides training and instruction in the following topics: technology in education; multimedia and the Star Link Project; introduction to Windows for Workgroups; using Windows for Workgroups and Networks; word-processing in Claris; communicating with Claris.

Title: Basic Technological Literacy, Part B
Grade Level: Unspecified
Audience: Students and Teachers
Project: Star Links
Provider: Ana G. Mendez University System

Description: Series provides training and instruction in the following topics: Internet to transfer documents; remote logging into data banks; Clarisworks for drawings; Clarisworks for painting; Action software and multimedia; Action for multimedia.

Title: Introduction to Personal Computers and Applications
Grade Level: College
Audience: Students
Project: Pacific Star Schools Partnership

Provider: STEP/Star

Description: This course, designed for individuals with no previous experience using a computer, offers common, practical uses of a personal computer: word processing, spreadsheet design and manipulation and data base management.